DOCUMENT RESUME

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IDENTIFIERS	*Oregon

ABSTRACT

This document is designed to help school personnel analyze their current curriculum for grades 9, 10, and 11 in terms of the Mathematics Common Curriculum for Oregon. The common curriculum goals are organized into nine content strands: (1) number and numeration; (2) appropriate computational skills; (3) problem solving; (4) geometry and visualization skills; (5) measurement; (6) statistics and probability; (7) mathematical relationships; (8) oral and written communication skills; and (9) appropriate study skills. Each strand contains knowledge and skills to be developed with expected outcomes for students to achieve by the end of grade 11. Columns are provided to indicate the extent to which the expected outcomes are emphasized by (1) amount of instruction, (2) inclusion in course goals, (3) inclusion in instructional materials, and (4) coverage in staff training. Results of the analyses can be compiled and used to guide staff training and selection or development of materials. (RH)

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ED288709

MATHEMATICS

Common Curriculum Goals

Curriculum Mapping

End of Eleventh Grade

Oregon Department of Education
700 Pringle Parkway SE
Salem, Oregon 97310-0290

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USE OF THIS DOCUMENT

This document is provided for your convenience. Curriculum mapping is not a required activity. However, you will find that information obtained in this process will be helpful in analyzing your current curriculum in terms of the Mathematics Common Curriculum Goals and planning for updating curriculum.

INSTRUCTIONS

Use of this document to gather information

1. Decide on questions to be asked. Some questions are provided in the column headings. You may wish to add or delete column headings.

2. Items marked with an asterisk (*) are unique to the Mathematics Common Curriculum Goals or indicate that a change has occurred in the wording of an Essential Learning Skill. Schools that have mapped for Essential Learning Skills may wish to survey only the asterisked items.

3. Determine who will respond to the survey and under what conditions.

4. Reproduce the document and provide staff orientation and training.

5. Clarify intent of column headings and numeric scores.

   Amount of Instruction:

   Considerations here include amount of time and quality of instruction and feedback provided to students on the skill. Practice or application should only be considered if it is accompanied by instruction.

   Included in Course Goals:

   To be considered here is the degree to which the current local course goals reflect a particular common curriculum goal.

   Adequate Materials:

   Considerations here include the quality and the quantity of instruction and practice provided in the text or supplementary material. Any concerns about sufficient materials for each student should be reflected in the comment section rather than in the score.

Ratings: 0 = absence or a complete lack of the items specified in the column heading.
1 = a low or inadequate amount or quality of the specified item.
2 = a moderate or reasonably satisfactory amount or quality of the specified item.
3 = a high or substantial amount or quality of the specified item.

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Adequate Teacher Training:

Considerations here include teacher preservice, inservice, college courses, workshops, personal reading and experiences which provide the teacher with the necessary skills to teach toward the specified goals.

Blank Column:

This column is provided for questions that you would like to add.

Comments:

Encourage teachers to use this section to clarify their ratings or express related concerns.

Use of this document to tally results

Results can be tallied in the space provided above numeric scores on an unmarked form. Consideration should be given to tallying by grade level or course title.

Use of this document to analyze results

An additional unmarked document can be used to display results across grades or courses for analysis and decision-making. Data could be displayed in a numeric average, as a compilation of all ratings, with a word descriptor (such as low, medium, high), or symbolically, using color coding.

SCHOOL: _____

ASSIGNMENT: 9 ___ 11 ___ 10 ___ Course _____ End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
1.0 Number and Numeration. Students demonstrate an understanding of number and numeration concepts and use these understandings to interpret and solve problems.							
STUDENTS WILL BE ABLE TO:							
1.1 READ, WRITE, ORDER, COMPARE AND USE NUMBERS (ELS 1.4)*							
a Read, write and order numbers including decimals, commonly used fractions, percents and numbers in scientific notation	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Express large and small numbers in expanded exponential notation	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Order signed numbers and commonly used fractions, decimals and percents	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
1.2 USE CONCRETE AND PICTORIAL MODELS TO DEMONSTRATE NUMBER AND NUMERATION CONCEPTS (ELS 1.4)							
a Order, compare and model commonly used fractions, decimals, percents and signed numbers, and give examples of positive and negative quantities (e.g., temperature, football, bank balances, altitude)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
b Identify the number of ones, tens, hundreds, thousands, ten-thousands, and hundred-thousands in numbers less than one million, and tenths, hundredths, and thousandths, in numbers less than one	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
1.3 RECOGNIZE AND USE NUMBER PROPERTY CONCEPTS							
a Use and apply operational properties	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Recognize and use mathematical terms	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Use and apply order of operations rules as appropriate for mental, paper/pencil and calculator usage	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
2.0 Appropriate Computational Skills. Students select and use the most appropriate form of computation - manipulative, mental, paper/pencil, estimation or calculator usage to solve problems and check all computations for reasonability.							
STUDENTS WILL BE ABLE TO:							
2.1 USE MENTAL, PAPER AND PENCIL, ESTIMATION AND CALCULATOR COMPUTATIONS TO SOLVE APPROPRIATE PROBLEMS (ELS 1.4 and 1.7)							
a Use mental, manual, calculator and computer processes to perform mathematical operations	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Select the most appropriate method(s) of computation (mental, paper/pencil, calculator) to use in a given situation	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Use and apply estimation techniques	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Recognize that the same arithmetic algorithms used with 1-3 digit numbers can be extended to multidigit computations	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
g Compute using measures	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
h Use calculator and/or computer to solve appropriate problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
i Convert mentally, manually and electronically among decimals, percents and commonly used fractions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
j Use estimation and other skills to check answers for reasonableness	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
2.2 DEMONSTRATE COMPUTATIONAL ALGORITHMS WITH CONCRETE MATERIALS OR REAL-WORLD EXAMPLES							
b Use concrete or pictorial models to demonstrate addition, subtraction and multiplication of signed numbers	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Use concrete materials or "real world" examples to demonstrate operations with decimals and percents	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Use concrete materials or "real world" examples to demonstrate operations with commonly used fractions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
3.0 Problem Solving. Students use problem-solving skills and strategies to solve routine and nonroutine problems.							
STUDENTS WILL BE ABLE TO:							
3.1 IDENTIFY PROBLEMS AND APPROACH THEIR SOLUTION IN AN ORGANIZED MANNER (ELS 6.3)							
a Define a problem, choose information to solve the problem and supply additional information, if needed	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Apply recognized research techniques to analyze problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Design and carry out a plan for solving a problem	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Solve problems using the most appropriate tools, methodologies, processes and operations in solving a variety of problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
e Identify alternative solutions to problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Choose and apply mental, manual, calculator, and computer processes to problem-solving strategy(ies)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
g Select and apply appropriate problem-solving tools, including computer software	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
h Evaluate problem-solving strategies in terms of tools, methodologies, processes, operations	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
i Engage in cooperative problem solving and compare alternative solution strategies	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
j Analyze formative and summative data to confirm or revise the proposed solution	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
3.2 CREATE AND SOLVE WORD PROBLEMS APPROPRIATE TO THE GRADE LEVEL (ELS 6.3)							
a Recognize appropriate operation(s) for solutions of word problems and recognize information necessary to solve word problems, and supply reasonable additional information, if needed	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Pose and solve word problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
c Solve and create problems to match exercises involving ratios, proportions and formulas	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Identify, invent or create problems that can be solved by using ratio and proportion; and use proportion to solve problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
e Solve problems with more than one possible solution and recognize problems which cannot be solved because they contain too little information	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Translate "real-world" problems into mathematical statements, and mathematical problems and answers back into "real-world" context	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
4.0 Geometry and Visualization Skills. Students recognize geometric patterns and relationships and apply them in solving problems and making predictions.							
STUDENTS WILL BE ABLE TO:							
4.1 RECOGNIZE AND USE GEOMETRIC PATTERNS, RELATIONSHIPS AND PRINCIPLES TO DESCRIBE AND CLASSIFY (ELS 1.5)							
a Identify and compare common two- and three-dimensional geometric shapes and solids according to attributes and properties	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Model or make drawings of 2- or 3-dimensional shapes and solids useful in solving problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Recognize and apply the concepts of symmetry, congruency and similarity of geometrical figures as commonly used in man-made objects	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Use drawings, models or computers to demonstrate geometric patterns and relationships such as similarity and congruence	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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End of Eleventh Grade	Amount of Instruction	Included in Course Goals	Adequate Materials: Basal Text	Adequate Materials: Supplementary	Adequate Teacher Training		COMMENTS
e Locate points and lines and determine distance and area in a rectangular coordinate system (emphasize examples from the environment and computer applications)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Apply and use circle and triangle relationships in solving problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
4.2 MAKE AND USE GEOMETRIC DRAWINGS AND MODELS, INCLUDING TESSELLATIONS							
b Use protractor, compass, ruler, computer, and other instruments to make common geometric constructions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Draw the net (2 dimentional pattern) for common geometric solids	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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4.3 UNDERSTAND AND USE PERIMETER, AREA AND VOLUME CONCEPTS							
a Use and apply perimeter, area and volume concepts	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Estimate perimeter, area and volume	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Calculate perimeter, area and volume	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Calculate surface areas of regularly shaped solids (e.g., cubes, cylinders, rectangular boxes)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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5.0 Measurement. Students measure quantities and use measurements to keep records, solve problems and make predictions.							
STUDENTS WILL BE ABLE TO:							
5.1 POSE AND SOLVE PROBLEMS THAT INVOLVE TIME AND MONEY (ELS 1.7)							
c Create and solve problems which involve time and money, including consumer and wage earner situations of interest to students	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
5.2 SELECT AND USE APPROPRIATE INSTRUMENTS AND UNITS TO ESTIMATE AND MEASURE LENGTH-WEIGHT; VOLUME AND CAPACITY; AND TEMPERATURE (ELS 1.7)							
a Determine the most appropriate unit and instrument for a measurement task	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Estimate and directly measure length, area, volume, time, weight (mass), etc., with reasonable accuracy, and/or round a measurement to a given unit	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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f Explain why all measurements are approximations and why results of all computations with measurements are approximations	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
5.3 DETERMINE INDIRECT MEASUREMENTS							
a Apply ratio and proportion concepts in making and using scale drawings and models, and in solving problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Find and record measurements using proportions and formulas	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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6.0 Statistics and Probability. Students collect, organize, record and interpret data and predict probable outcomes based on collected data.							
STUDENTS WILL BE ABLE TO:							
6.1 RECOGNIZE AND USE MATHEMATICAL PATTERNS, RELATIONSHIPS AND PRINCIPLES TO QUANTIFY PROBLEMS OR MAKE PREDICTIONS (ELS 1.6)							
[a] Interpret everyday uses of probability such as weather predictions, election forecasts or chances of winning a lottery	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
[b] Identify and demonstrate situations in which probability or chance of an event occurring is likely, unlikely, equally likely; and whether a game is "fair"	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
[e] Read and interpret graphs, tables and charts, and make predictions based upon them	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
[f] Organize and display data using tables, charts, graphs, and diagrams	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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g Use data gathering procedures which will aid in answering questions of interest (conducting polls, sampling schemes)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
h Understand the relationship between size of sample and degree of certainty	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
i Identify misleading or incorrect methods of displaying or interpreting data	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
j Use computer software to generate graphs and tables	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
k Show the relationship among variables using tables, graphs, formulas and models	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
l Defend conclusions from information given	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
m Collect, display, interpret statistical data using mean, mode, median, range and percentile	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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6.2 GENERATE AND TEST INTERPRETATIONS, EXPLANATIONS, PREDICTIONS, AND HYPOTHESES (ELS 6.2)							
a Critically analyze explanation and interpretation to confirm or validate them	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Develop a hypothesis using data from a variety of sources	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Design and conduct a test of a hypothesis and report the results	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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7.0 Mathematical Relationships. Students recognize and use number patterns, relationships, and logical thinking skills to make predictions and to solve problems.							
7.1 SORT AND CLASSIFY; USE LOGICAL THINKING (ELS 5.2)							
a Classify geometrical figures and sets of numbers	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Use evidence from verifiable sources to support own ideas and concepts in problem solving	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Select and use details, examples, illustrations, evidence and logic to problem solve	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Organize information or data using formats such as outlining, making maps, tables, charts, graphs; and computer spread sheets	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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7.2 COMPREHEND MEANINGS OF WRITTEN, ORAL AND VISUAL COMMUNICATIONS INVOLVING NUMBER PATTERNS AND RELATIONSHIPS (ELS 3.1)							
a Use equality and inequality concepts and symbols	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Relate new information to previous knowledge	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Synthesize information and draw conclusions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Find numerical patterns and use to complete charts and tables	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Infer direct and indirect cause and effect relationships	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
g Demonstrate fraction, decimal, percent relationships	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
h Interpret and use the concepts of ratio, percent and commonly occurring rates such as growth, speed, interest and cost per unit	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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7.3 RECOGNIZE, CONSTRUCT AND DRAW INFERENCES CONCERNING RELATIONSHIPS AMONG THINGS AND IDEAS (ELS 6.1)							
b Evaluate or make a table for two-variable formulas and match a graph or table of values to its formula	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Describe the nature of change of each variable as suggested by a table of values, graph, or formula	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
7.4 REFLECT UPON AND IMPROVE OWN REASONING (ELS 6.6)							
a Present arguments supporting the use of deductive or inductive reasoning for a particular purpose	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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8.0 Oral and Written Communication Skills. Students use vocabulary, speech, numerals and other symbol systems essential for effective individual and group problem solving and for effective oral and written communication of mathematical concepts, problem-solving processes and results.							
STUDENTS WILL BE ABLE TO:							
8.1 RECOGNIZE AND USE MATHEMATICS VOCABULARY COMMONLY USED IN GRADE-LEVEL MATERIALS (ELS 1.1)							
b Use context clues in a selection to infer correct word(s)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Distinguish affixes and root words	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Use basic mathematical terms and symbols to convey concepts of quantity, order, operation, and shape	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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8.2 DETERMINE MEANING OF UNKNOWN WORDS COMMONLY USED IN MATHEMATICAL MATERIALS (ELS 1.2)							
a Use context clues punctuation and syntax to infer meaning of unknown words and concepts	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Recognize double meanings of words	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Use knowledge of affixes and root words to determine word meanings	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Use dictionaries, glossaries and definitions in footnotes to find word meanings	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
8.3 SPEAK WITH STANDARD PRONUNCIATION, APPROPRIATE VOLUME, RATE, GESTURES AND INFLECTIONS (ELS 1.3)							
b Pronounce words according to acceptable Standard English	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Make oral presentations that use verbal and non-verbal communication skills effectively	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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8.4 USE ORAL COMMUNICATION TO GIVE OR RECEIVE INFORMATION AND DIRECTIONS (ELS 2.3)							
a Paraphrase oral messages	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Give accurate oral directions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Ask questions designed to clarify, gain assistance or local information	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Share ideas and information orally with others	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
e Develop accurate detail based on oral explanations by others	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Take notes and prepare summaries based on oral presentations and group discussions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
g Follow multistep oral instructions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
8.5 DETERMINE THE SIGNIFICANCE AND ACCURACY OF INFORMATION AND IDEAS PRESENTED IN WRITTEN, ORAL, AURAL AND VISUAL COMMUNICATIONS (ELS 4.1)							
a Distinguish between logical and illogical conclusions	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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b Identify propaganda and other persuasion techniques (e.g., use and misuse of statistics)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
8.6 USE ORAL COMMUNICATION TO INFLUENCE OTHERS AND TO RESPOND TO PERSUASION (ELS 4.2)							
a Provide logical answers based upon factual data	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Use primary and secondary source materials to verify information	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Argue opposite sides of issues	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Recognize sources of persuasion and select appropriate persuasive response	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
e Use verbal persuasion techniques in a class presentation	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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8.7 LISTEN, READ, VIEW AND EVALUATE PRESENTATIONS OF MASS MEDIA (ELS 4.4)							
a Recognize persuasion techniques found in visual communications (e.g., use and misuse of graphs)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
8.8 SELECT APPROPRIATE FORM OF WRITING (ELS 5.3)							
a Write in a variety of forms such as personal essays, journals, reports, descriptions, or in problem posing or solving	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Use writing appropriate to purpose such as to inform, pose problems or solve problems	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
8.9 PRESENT IDEAS IN UNDERSTANDABLE SEQUENCE ON THE TOPIC SELECTED (ELS 5.4)							
a Write complete sentences	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Write multiparagraph personal journals, reports or problem solution strategies	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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8.10 SELECT AND USE GUAGE, GESTURES AND SYMBOLS APPROPRIATE TO PURPOSE, TOPIC AND SETTING WHEN MAKING ORAL PRESENTATIONS (ELS 5.5)							
[a] Employ verbal, symbolic, graphic and visual techniques to convey information	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
[b] Plan and make oral and visual presentations	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
8.11 EVALUATE AND REVISE OWN WRITING FOR MEANING, CLARITY, AND COMPREHENSIVENESS (REVISING AND REWRITING) (ELS 5.6)							
[a] Revise own writing for correctiveness and comprehensiveness	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
[b] Use descriptive and connecting terms to enhance meaning, clarity and precision	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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8.12 APPLY THE CONVENTIONS OF WRITING TO PRODUCE EFFECTIVE COMMUNICATION (EDITING AND PROOFREADING) (ELS 5.7)							
a Edit to produce a correct, legible, effective piece of writing	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Spell correctly	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Produce legible final copy (manual or electronic processes)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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9.0 Appropriate Study Skills. Students select and use appropriate study skills in order to accomplish mathematical learning tasks.							
STUDENTS WILL BE ABLE TO:							
9.1 IDENTIFY MAIN IDEAS, SUPPORTING DETAILS, AND FACTS AND OPINIONS PRESENTED IN WRITTEN, ORAL AND VISUAL FORMATS (ELS 2.1)							
a Locate facts in grade-level selections	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Identify necessary and extraneous facts and related supporting details	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Identify main idea in a problem situation	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
9.2 USE INSTRUCTIONAL MATERIALS AS BASIS FOR GAINING KNOWLEDGE AND IMPROVING COMPREHENSION (ELS 2.2)							
a Use table of contents, index, summaries, charts, graphs and illustrations to locate information needed	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Use organization of materials (summaries, headings and review questions)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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c Use diacritical markings or respellings to pronounce words	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
9.3 CLARIFY PURPOSES OF ASSIGNMENT (ELS 7.1)							
a Determine general purpose of assignment and ask clarification on questions if necessary	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Determine ideas, concepts, generalities or principles included in assignment	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
9.4 USE RESOURCES BEYOND THE CLASSROOM (ELS 7.2)							
a Locate, check-out and return books and other circulating media materials	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Locate and use non-circulating reference materials	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Use library classification system and services to locate specialized resources required to complete assignments	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Use computer, e.g., data bases, spread sheets	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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9.5 SELECT AND USE APPROPRIATE STUDY TECHNIQUES (ELS 7.3)							
a Follow a study plan including: time management, appropriate study environment, processing of information	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
b Accomplish learning task using appropriate study techniques (preview and review chapters, read and reread text, ask clarifying questions, seek help when needed, use memory techniques, summarize, study with classmates, use self-questioning)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
c Vary reading rate according to purpose for reading the selection	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
d Keep study materials, log, related notes and filing system organized and accessible	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
e Turn in assignments on time	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	
f Use appropriate test-taking techniques	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	

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